

REMARKS

Claims 1-42 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 1, 3-23, 27-33, 36, 37, and 39 to fix minor errors. The amendments to claims 1, 3-23, 27-33, 36, 37, and 39 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 1, 3-23, 27-33, 36, 37, and 39 were not made for reasons of patentability.

In addition, Applicant adds claims 40-42. Claims 40-42 are clearly supported throughout the specification, *e.g.*, pages 6, 34, and 43-45 of the specification.

I. Preliminary Matters

Applicant thanks the Examiner for initialing the references listed on Form PTO-1449 and Forms PTO/SB/08 A & B (modified) submitted with the Information Disclosure Statements filed on February 9, 2001, November 14, 2002, and January 7, 2003. Applicant also thanks the Examiner for accepting the drawings filed on October 5, 2000.

In addition, Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

By this Amendment, Applicant editorially amends the specification to fix typographical errors. In addition, Applicant amends Figs. 12 and 13 to fix minor errors. Corrected Drawings, as well as the Replacement sheets, are accompanying this response. As a result, the Examiner is

respectfully requested to acknowledge receipt and indicate approval of the drawing corrections in the next Patent Office paper.

II. Summary of the Office Action

The Examiner objected to the title and claims 27 and 28. In addition, the Examiner rejected claims 1, 2, 6, 7, 11, 16, 22, 23, 27-36, and 38 under 35 U.S.C. § 102(b) and claims 3-5, 8-10, 12-15, and 17-21 under 35 U.S.C. § 103(a).

III. Specification

The Examiner objected to the title for being not descriptive. Applicant herein amends the title. In view of this self-explanatory amendment to the title, Applicant respectfully requests the Examiner to now withdraw this objection to the specification.

IV. Claims Objections

The Examiner objected to claims 27 and 28 because of a typographical error. Applicant has revised the claims, and respectfully submits that claims 27 and 28 as now presented no longer include the potential informality mentioned by the Examiner. Applicant, therefore, respectfully requests the Examiner to withdraw the objections to the claims.

V. Claim Rejections under 35 U.S.C. § 102(b)

Claims 1-2, 6-7, 11, 16, 22-23, and 27-36 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,954,436 Kageyama et al. (hereinafter “Kageyama”). Applicant respectfully traverses this rejection and respectfully requests the Examiner to reconsider this rejection in view of the comments, which follow.

To be an “anticipation” rejection under 35 U.S.C. § 102, the reference must teach every element and recitation of the Applicant’s claims. Rejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. Thus, the reference must clearly and unequivocally disclose every element and recitation of the claimed invention.

Of the rejected claims, only claims 1, 2, 6, 7, 11, 22, 33, 35, and 36 are independent. This response focuses initially on the independent claim 1. Claim 1, among a number of unique features recites, “command generating means for generating a feed command for correcting timing of feeding the printing medium when said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium.” The Examiner alleges that claim 1 is directed to a printer control unit and is anticipated by Kageyama.

In particular, the Examiner alleges that Kageyama’s wait state is equivalent to the feed command for correcting the timing of feeding the printing medium with image printed on one side, *i.e.*, performing the printing of the second image on the reverse side (see page 2 of the Office Action). Applicant respectfully disagrees with the Examiner. Applicant has carefully studied Kageyama’s discussion of the wait state, which is not similar to correcting the timing of the feeding when printing on the reverse side of the printing medium, as set forth in claim 1.

In the exemplary, non-limiting embodiment of the present invention, the timing in feeding the printing medias having images printed on the front surfaces is adjusted so that these printing medias are subject to a timing lag before arriving to the print head. Consequently, the

accuracy of the registration of the printing medias with respect to the print head is improved, so that the image is printed at the proper position of the printing medium. In other words, in the exemplary embodiment, extra time is allocated for feeding the printing medium when reverse side printing is performed. This passage is provided by way of an example only and is not intended to limit the scope of the claims in any way.

In general, Kageyama provides a printing method for handling printing in case of the paper size and the number of copies being different between right side and reverse side. In addition, Kageyama attempts to prevent sheets being kept inadvertently in the printer and having high freedom for use a rotation type double side printing mechanism (col. 2, lines 25 to 35).

In particular, Kageyama teaches receiving the data which indicates formats of the right side and a reverse side of a sheet and drawing the right and the reverse side images on a memory according to the data. Next, Kageyama teaches printing the right side image on the right side of the sheet according to the right side format indicated by the data and detecting whether the formats of the right side and the reverse side are acceptable as double side printing. Finally, when the formats are acceptable as double side printing, the command is issued to print on the reverse side image on the reverse side of the sheet, and when formats are not acceptable as double side printing, printing the reverse image on another sheet (col. 2, lines 38 to 50).

Kageyama teaches a printing apparatus having page buffers for storing the data of a number of pages to be printed. In addition, Kageyama teaches that the printing apparatus has a drawing processing unit for drawing the data on the page buffers in accordance with print commands from a host computer, and requesting to start printing of the pages sequentially when

each page of the data have been drawn on the page buffers. In addition, the printing apparatus is able to detect whether the drawn page is a first half page or a second half page and to start printing of the data of the first half page if the first half page is detected, whereas when the second half of the page is detected, the printing apparatus is set to a wait state. When a predetermined condition is detected, the wait state is released (col. 2, lines 53 to 68).

Kageyama teaches that the predetermined condition may be when the number of sheets which is retained in the printer engine reaches a maximum limit or that the last page of a document is detected by the drawing processing unit based on reception of a command indicating the end of double-side printing from the host system. More typically, the wait state can be used as the predetermined condition that a change of paper size, paper-supply unit or paper-eject unit is detected. In this case, the drawing processing unit detects whether the change of paper size, paper-supply unit or paper-eject unit is detected in accordance with indication of a paper size, a paper-supply unit or a paper-eject unit in the commands received from the host system, and registers it in a control table. Then, the printing processing unit references the contents of the control table, and releases all printing tasks in the second-half printing wait state to the second-half printing wait state one after another if the change of paper size, paper-supply unit or paper-eject unit is detected, and data of the released tasks is printed (col. 3, lines 1 to 28).

Kageyama, however, only discloses releasing the wait state when a predetermined condition or conditions are met, *e.g.*, the printer engine reaches a maximum limit or the last page of a document is detected. Kageyama, however, does not disclose correcting the feeding time. In Kageyama, the process is simply halted for a period of time (wait state). In addition, in

Kageyama, the process is halted when half a page is printed not when the printing is to be performed on the reverse side of the recording medium. In Kageyama, there is no disclosure of the timing for feeding being corrected.

In fact, Kageyama only briefly addresses the feeding in Figures 3 and 4. Kageyama teaches determining whether the printer engine is in a double-side printing mode. If the printer engine is in a double-side printing mode, a single-side printing mode selecting command is issued to the printer-engine unit and the reverse-side printing flag is turned to on (Fig 4; col. 30, lines 23 to 64).

Kageyama, however, clearly fails to teach or suggest correcting the feeding time of the recording medium when printing on the reverse side. Kageyama, only discloses waiting until printing tasks are sequentially released from the second-half printing wait state when the change of paper size, paper-supply unit or paper-eject unit is detected and the released tasks are sequentially printed. In other words, Kageyama does not teach or suggest prolonging the feeding time or shortening the feeding time based on certain condition. Kageyama does not teach or suggest adjusting a timing lag for the printing medium to arrive to the print head, for example. In short, Kageyama is not related to a proper positioning of the printing medium having an image on the one side but simply teaches halting the process to perform certain operations. That is, Kageyama fails to unequivocally disclose correcting the feeding time.

Therefore, “command generating means for generating a feed command for correcting timing of feeding the printing medium when said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later

out of a pair of images to be printed on both surfaces of said printing medium,” as set forth in claim 1 is not disclosed by Kageyama, which lacks correcting the timing of the feeding for the reverse side printing. For at least these exemplary reasons, Applicant respectfully submits that claim 1 is patentably distinguishable from (and is patentable over) Kageyama. Applicant respectfully requests the Examiner to withdraw this rejection of claim 1.

Next, with respect to claim 2, it recites a number of unique features not taught by Kageyama. For example, claim 2 recites: “command generating means for generating a command, upon receipt of the designation of said double-side printing mode by said mode designation receiving means, for rotating said registering roller in the direction to move said printing medium backward before restart of advancement and rotating said feeding roller in accordance with the rotation of said registering roller in order to feed said printing medium for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium.”

In the exemplary, non-limiting embodiment when performing the printing on the reverse side, the registering roller is rotated to move the printing medium towards the feeding roller and the feeding roller is rotated in the direction towards the registering roller. Consequently, the edges of the printing medium are aligned for a better quality printing. This is provided by way of an example only and is not intended to limit the scope of the claims in any way.

The Examiner alleges that Figs. 13 and 14 of Kageyama teach the exemplary features quoted above with respect to claim 2 (see page 3 of the Office Action). Applicant respectfully disagrees. To begin, Kageyama is not related to a problem of alignment of the edges of the

printing medium. Kageyama fails to even mention a single roller throughout the reference. In Kageyama, no rollers are discussed. Kageyama only teaches the printing process and printing the front side and then the reverse side (by holding the printing on the reverse side in a waiting state). Kageyama, however, does not teach or suggest issuing a command for the feeding roller and/or the registering rollers. Moreover, Kageyama does not disclose the rotational direction of various rollers.

Clearly, Kageyama does not disclose rotating the registering roller in the direction to move the printing medium backward and the feeding roller towards the registering roller. In fact, Kageyama only teaches printing when the wait state is released. In Kageyama, however, there is no teaching or suggestion of generating a command for the rollers. Figs. 3 and 4 of Kageyama, briefly explain selecting printing paths. But even these Figures and the corresponding paragraphs do not address any rollers or rotational direction for various rollers in relation to each other.

Therefore, “command generating means for generating a command, upon receipt of the designation of said double-side printing mode by said mode designation receiving means, for rotating said registering roller in the direction to move said printing medium backward before restart of advancement and rotating said feeding roller in accordance with the rotation of said registering roller in order to feed said printing medium for printing a second image that is to be printed later out of a pair of images to be printed on both surfaces of said printing medium,” as set forth in claim 2 is not disclosed by Kageyama, which lacks having a command for the rollers and having the command indicate the rotational direction of the feeding roller and the registered

roller. For at least these exemplary reasons, Applicant respectfully submits that claim 2 is patentably distinguishable from Kageyama. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of claim 2.

Next, independent claims 6 and 7 contain features that are similar to the features argued above with respect to claims 1 and 2, respectively. Therefore, arguments presented with respect to claims 1 and 2 are respectfully submitted to apply with equal force here. For at least substantially the same reasons, Applicant respectfully requests the Examiner to withdraw this rejection of independent claims 6 and 7.

Next, Applicant respectfully addresses this rejection with respect to independent claim 11. Claim 11 recites a number of unique features including “command generating means for generating a command, upon receipt of the designation of double-side printing mode by said printing mode designation receiving means, for delaying the start of feeding the printing medium for printing a second image which is to be printed later out of a pair of images having consecutive page numbers among a plurality of images to be printed by said printer.” The Examiner alleges that this feature is equivalent to the features recited in claim 1 and therefore claim 11 is rejected for similar reasons (see page 4 of the Office Action). Applicant respectfully disagrees. By simple claim differentiation, “delaying start of feeding” cannot be equated to “correcting timing of feeding.”

Kageyama teaches waiting until printing tasks are sequentially released from the second-half printing wait state when the change of paper size, paper-supply unit or paper-eject unit is detected and the released tasks are sequentially printed. In other words, Kageyama does not

teach or suggest delaying the start of feeding for printing the second image on the reverse side.

In short, Kageyama simply teaches halting the process to perform certain tasks such as change of paper size, paper-supply unit and so on. That is, Kageyama fails to unequivocally disclose delaying the start of feeding the printing medium for printing the second image on the reverse side.

Therefore, “command generating means for generating a command, upon receipt of the designation of double-side printing mode by said printing mode designation receiving means, for delaying the start of feeding the printing medium for printing a second image which is to be printed later out of a pair of images having consecutive page numbers among a plurality of images to be printed by said printer,” as set forth in claim 11 is not disclosed by Kageyama, which lacks delaying the start of feeding for the reverse side but instead discloses a simple wait state for performing tasks such as changing the paper size. Claim 16 is patentable at least by virtue of its dependency on claim 11.

Next, claim 22 recites a unique combination of features including: “transmit-receive means for making an inquiry about said ink jet printer whether or not the double-side printing is possible when double side printing mode is designated by said mode designation means, receiving a response to said inquiry, and issuing a printing command as said command.” The Examiner alleges that claim is directed to the print control unit and is anticipated by Kageyama. In particular, the Examiner alleges that print task unit, Figs. 2-8 are equivalent to making an inquiry whether the double side printing mode is possible (see page 4 of the Office Action). Applicant respectfully disagrees.

Kageyama only teaches detecting whether the image to be printed on the reverse side is in acceptable format for being printed on the reverse side, and if not printing the second image on the individual page (col. 2, lines 45 to 50). In addition, Kageyama teaches determining whether the user specified a double-side printing or a single side printing, and when the double printing is specified turning on the double-side print flag.

Kageyama, however, fails to teach or suggest determining if the double-side printing is possible when the double-side printing mode is designated. In Kageyama, the printer can print on both side as illustrated in Figs. 3 and 4. Consequently, when the double-side printing is selected by the user, in Kageyama, the double-side printing flag is simply turned on. Kageyama, fails to disclose a print control unit that can supply the commands to the printing apparatus that is only capable of manual double-side printing. In other words, Kageyama's system does not determine whether double-side printing is possible when the user designates the double-side printing mode.

Therefore, "transmit-receive means for making an inquiry about said ink jet printer whether or not the double-side printing is possible when double side printing mode is designated by said mode designation means, receiving a response to said inquiry, and issuing a printing command as said command," as set forth in claim 22 is not suggested by Kageyama, which lacks determining if the double-side printing is possible when the user designates this printing mode. For at least these exemplary reasons, Applicant respectfully requests the Examiner to withdraw this rejection of claim 22 and its dependent claims 23 and 27-32.

Next, Applicant respectfully addresses this rejection with respect to claim 33. Claim 33 recites: “wherein said ink jet printer permits installation of a reversing mechanism for reversing said printing medium after one of the surfaces of said printing medium is printed...installation detecting means for detecting whether or not said printing medium reversing mechanism is installed”. Applicant respectfully submits that Kageyama fails to disclose detecting whether the reversing mechanism is installed or installing said mechanism after printing one surface of the printing medium.

The Figures of Kageyama cited by the Examiner do not mention installation, nor do they suggest detecting whether the reversing mechanism is installed or installing the mechanism after printing one surface. Kageyama only teaches determining whether the operator designated a single side printing mode or a double side printing mode. Kageyama, however, is not related to an installation of the reversing mechanism. In Kageyama, it is assumed that the reversing mechanism is provided in the printer (e.g., Fig. 3). In short, Kageyama does not teach or suggest installation of the reversing mechanism.

For at least these exemplary reasons, Applicant respectfully submits that claim 33 is patentably distinguishable from (and is patentable over) Kageyama, which lacks any teaching of installation of the reversing mechanism. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection of claim 33. Claim 34 is patentable at least by virtue of its dependency on claim 33.

Next, claim 35 recites features similar to the features argued above with respect to claim 22. Namely, claim 35 recites “transmit-receive means for receiving an inquiry about whether or

not double-side printing is possible and making a response indicating that double-side printing is possible.” Since claim 35 contains features that are similar to the features argued above with respect to claim 22, those arguments are respectfully submitted to apply with equal force here. For at least substantially the same reasons, therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claim 35.

Independent claims 36 and 38 recite features similar to the features argued above with respect to claims 22 and 33. Since claims 36 and 38 contain features that are similar to the features argued above with respect to claims 22 and 33, those arguments are respectfully submitted to apply with equal force here. For at least substantially the same reasons, therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claims 36 and 38.

VI. Claim Rejections under 35 U.S.C. § 103(a)

Claims 3-5, 8-10, 12-15, and 17-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kageyama in view of U.S. Patent No. 6,273,535 to Inoue et al. (hereinafter “Inoue”). First, Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claims 3-5. Applicant has already demonstrated that Kageyama does not meet all the requirements of independent claim 1. Inoue is relied upon only for its teaching of detecting information on the quantity of ink (see page 6 of the Office Action).

Clearly, Inoue does not cure the deficient teachings of Kageyama. Together, the combined teachings of these references would not have (and could not have) led the artisan of

ordinary skill to have achieved the subject matter of claim 1. Since claims 3-5 are dependent upon claim 1, they are patentable at least by virtue of their dependency.

In addition, dependent claim 3 recites: "...said command generating means generates a command for rotating said registering roller and said feeding roller at a rotational speed in accordance with information detected by said detecting means on said first image to be printed in combination with said second image." The Examiner acknowledges that Kageyama does not teach or suggest detecting quantity of ink used for printing the first image (see page 6 of the Office Action). The Examiner, however, alleges that Inoue cures the deficient teachings of Kageyama. Applicant respectfully disagrees.

Inoue only teaches adjusting ink quality and quantity based on the image to be printed (Fig. 5; col. 7, lines 21 to 45). Inoue, however, fails to teach or suggest adjusting the quantity of ink for the reverse side, the second image, based on the quantity of ink used to print the first image. For at least this additional reason, Applicant respectfully submits that claim 3 is patentable over the combined teachings of Kageyama and Inoue.

Next, Applicant respectfully traverses this rejection with respect to the dependent upon claim 6, claim 9 and with dependent upon claim 7, claims 8 and 10. Applicant has already demonstrated that Kageyama does not meet all the requirements of the independent claims 6 and 7. Inoue is relied upon only for its teaching of detecting information on the quantity of ink (see page 6 of the Office Action). Clearly, Inoue does not cure the deficient teachings of Kageyama. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claims 6 and 7. Since claim 9

depend on claim 6 and claims 8 and 10 depend on claim 7, claims 8-10 are patentable at least by virtue of their dependency.

Next, Applicant respectfully traverses this rejection with respect to the dependent upon claim 11, claims 12-15 and 17-20. Applicant has already demonstrated that Kageyama does not meet all the requirements of independent claim 11. Inoue is relied upon only for its teaching of detecting information on the quantity of ink (see page 6 of the Office Action). Clearly, Inoue does not cure the deficient teachings of Kageyama. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 11. Since claims 12-15 and 17-20 are dependent upon claim 11, they are patentable at least by virtue of their dependency.

In addition, dependent claim 12 recites features similar to the features argued above with respect to the dependent claim 3. Therefore, these arguments are respectfully submitted to apply with equal force here. For at least this additional reason, Applicant respectfully submits that claim 12 is patentable over the combined teachings of Kageyama and Inoue.

Independent claim 21 recites features similar to the features argued above with respect to claims 11 and 12. Therefore, arguments submitted with respect to claims 11 and 12 are respectfully submitted to apply with equal force here. For at least substantially the same reasons, therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claim 21.

Claims 24-26, 37, and 39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kageyama in view of U.S. Patent No. 6,053,645 to Myung (hereinafter “Myung”). First,

Applicant respectfully traverses this rejection with respect to the dependent upon claim 22, claims 24-26 and dependent upon claim 38, claim 39. Applicant has already demonstrated that Kageyama does not meet all the requirements of independent claims 22 and 38. Myung is relied upon only for its teaching of margin setting (see page 7 of the Office Action). Clearly, Myung does not cure the deficient teachings of Kageyama. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claims 22 and 38. Since claims 24-26 depend on claim 22, and claim 39 depends on claim 38, claims 24-26 and 39 are patentable at least by virtue of their dependency.

Finally, Applicant respectfully addresses this rejection with respect to independent claim 37. Claim 37 recites features similar to the features argued above with respect to claim 22. Therefore, these arguments are submitted to apply with equal force herein. For at least substantially the same reasons therefore, Applicant respectfully requests the Examiner to withdraw this rejection of claim 37.

VII. New Claims

In order to provide more varied protection, Applicant adds claims 40-42. Claims 40-42 are patentable at least by virtue of their dependency on claims 1, 6, and 11, respectively.

VIII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
U.S. Application No.: 09/679,882

Attorney Docket No.: Q61079

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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CUSTOMER NUMBER

Date: December 21, 2004

AMENDMENTS TO THE DRAWINGS

The attached two sheets of drawings contain the following changes:

Fig. 12 a numerical reference ---300'--- is added. The numeric reference 300' is described on page 47, line 9 of the specification.

Fig. 13 labels "Y" and "N" for the step 70 are switched.

Attachment: Two (2) sheets of Annotated Marked-up Drawings

Two (2) sheets of Replacement Drawings